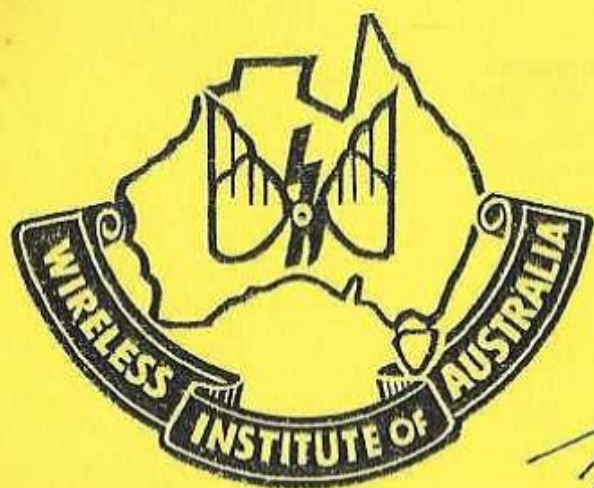
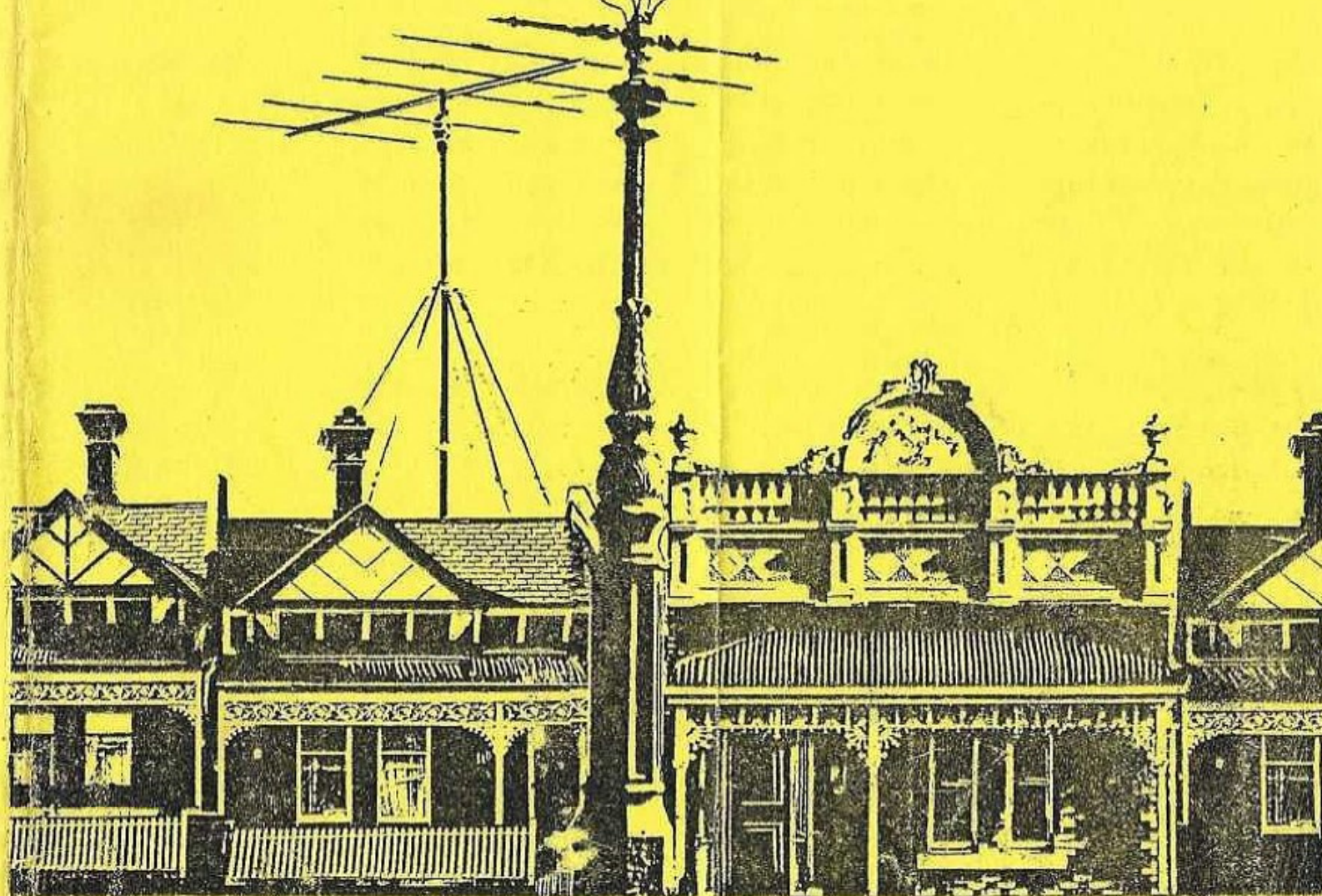


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B·A·R·G NEWS

AUGUST 1985



© Monthly Newsletter of the
Ballarat Amateur Radio Group

85/08 02

COMMITTEE

B.A.R.G. OFFICERS 1985-1986

HOME

BUSINESS

President.	Lou Iaquinto.	VK3 DFI	49 2200	Ext.241 After 4.30
Vice President	Geoff Smith.	VK3 ADB	32 1037	
Secretary	Jim Wright.	VK3 CFB	32 7563	
Asst. Secretary	Dick Forrester.	VK3 VU	35 7663	39 1001
Treasurer	Harry Hekkema.	VK3 KGL	35 7563	39 1001
Technical Officers	Phil Seddon	VK3 AQM	31 5220	31 3166
	Ian Robinson.	VK3 BTX	32 4139	
	Maurie Batt.	VK3 XEX	42 2245	
	Dick Antosiewicz.	VK3 AEX	32 3273	31 1818
Q.S.I. Manager	Cliff Bilston.	VK3 PAF	35 8048	
Awards Manager	Maurie Batt.	VK3 XEX	42 2245	
Publicity Officer	John Hazledine.	VK3 CFH	39 1971	
Education Officer	Bob Terrill.	VK3 BNC	39 5317	39 1001
Property Officer	Dick Antosiewicz.	VK3 AEX	32 3273	31 1818
Newsletter Committee.	Dick Forrester.	VK3 VU	35 7663	39 1001
	Fred Quick.	VK3 NIH	32 3216	32 6455
	Ron Watkins.	VK3 XOA	35 6017	32 1447
	Henry Horitz.	VK3 DXC	35 5130	
Net Co-ordinator	Fred Quick.	VK3 NIH	32 3216	32 6455
W.I.C.E.N. Committee	Dick Antosiewicz.	VK3 AEX	32 3272	31 1818
	Geoff Smith.	VK3 ADB	32 1037	
	Dick Forrester.	VK3 VU	35 7663	39 1001
Committee	Neil Davidson.	VK3 KQQ	35 9612	
	Peter Kenyon.	L30037		
	Evonne Wroe.		42 4376	

B.A.R.G. Meets the LAST FRIDAY of every month at the
BALLARAT EDUCATION CENTRE, Hopetoun Street. at 7.30 p.m.
 All Correspondence to P.O. Box 216E Ballarat East. 3350 Vic.

Awards Manager, VK3-XEX, R.S.D. Rokewood Junction. Vic.

APOLOGIES

PFF, PNP, NLR, PAF, NIH, ZL, NQQ, KQB, GFB.

MINUTES

The minutes of the previous meeting were read and accepted
XEX/DIE

BUSINESS ARISING

None.

TREAS REPORT

Balance as at 26/06/85 \$1588.45

Cheque acc. \$57.44
V.S. @L \$1531.01

BUSINESS ARISING

\$13.00 newsletter postage
\$15.00 hall hire (Exact amount of hire not known due to illness
of secretary. Treasurer empowered to pay outstanding amount.)
AXH/DXC

QSL MANAGER

Nil

AWARDS

4 Gold Rush issued.
4 DX widows issued.
2 Western District issued.

CLUB NET

Bud reported that all is going well on the net

PUBLICITY

No report.

EDUCATION

Dick reported that novice course going well with no-body
dropping out as yet. Lecturers happy with application of
students.

TECH OFFICER

Repeater RBA working very well. Good feedback from W.I.A. in
Melbourne.

GEN BUSINESS

Moved AXH that a committee be formed to investigate the purchase
of a new typewriter and/or repair of the present secretaries machine
and report to the next meeting. Seconded ADB.

Ian AXH reported that the regulations handbook will only be
available from the Government bookshop in Melbourne or by mail
from Canberra. The new revised handbook will be available soon
at a cost of approximately \$7.00.

Lou (DFI) encouraged all committee members to attend the next
committee meeting.

Intruder watch tapes now available from Dick VU. It was decided to
sell the tapes at \$2.00 each. More will be ordered if demand warrants

Greg DIE to investigate a trip to Ansetts.

Ian AXH to investigate a trip to Radio Australia at Burwood.

Next meeting will be a junk sale.

Ron XOA to investigate a trip to the new fire station.

Any surplus cash from the novice course to be used for local
education purposes. BNC to organise.

A TRUE CONSTANT-CURRENT CHARGER FOR Ni-Cd CELLS

Most hand-held radios are supplied with "plug-pack" type chargers. These are generally of fairly crude design and are far from the ideal "constant-current" type required for nickel-cadmium batteries.

As an example, the unit supplied with my rig starts charging a flat battery at 180mA and drops to 10mA over a period of several hours; hardly ideal and liable to damage the batteries and in any case takes over 24 hours to fully charge them.

Requirements for charging.

Nickel-Cadmium batteries should be charged at 10% of their current capacity for approx. 14 hours (completely discharged to completely charged)

My rig (Yaesu FT-208R) has a 450 mA-hour battery pack and so requires a charging current of 45 mA. Other rigs such as the FT-209RH with a 500 mA.-hour pack would need 50 mA.

This charger can be adjusted to suit any charging current likely to be required for a hand-held radio.

HOW IT WORKS

The charger is designed around the commonly available 7805 voltage regulator. The principle is that the 7805 will maintain a constant 5 volts across its load resistor (R1) and since the load resistor is constant then the current flowing through it is also constant. The batteries to be charged are effectively in series with R1. Note that the regulator quiescent current, I_q, also flows in the load. I_q is approx. 8 mA. so that the current in R1 needs to be 8 mA. less than the required output current.

Calculating R1 is easy enough and is done as follows:

$$R1 = \frac{5}{I_{out} - 8}$$

eg. for I_{out} = 50 mA. $R1 = \frac{5}{50 - 8} = 119 \text{ Ohms}$
(120 Ohms)

Intrepid constructors might replace R1, with a trimpot and adjust it to the required output current. In this case use a 200 Ohm trimpot and adjust it carefully.

USING THE CHARGER

The charger will charge battery packs up to 24V. or individual cells. If you have a spare battery pack for your rig you can put it in series with the one in the rig and charge the two simultaneously (don't put them in parallel !)

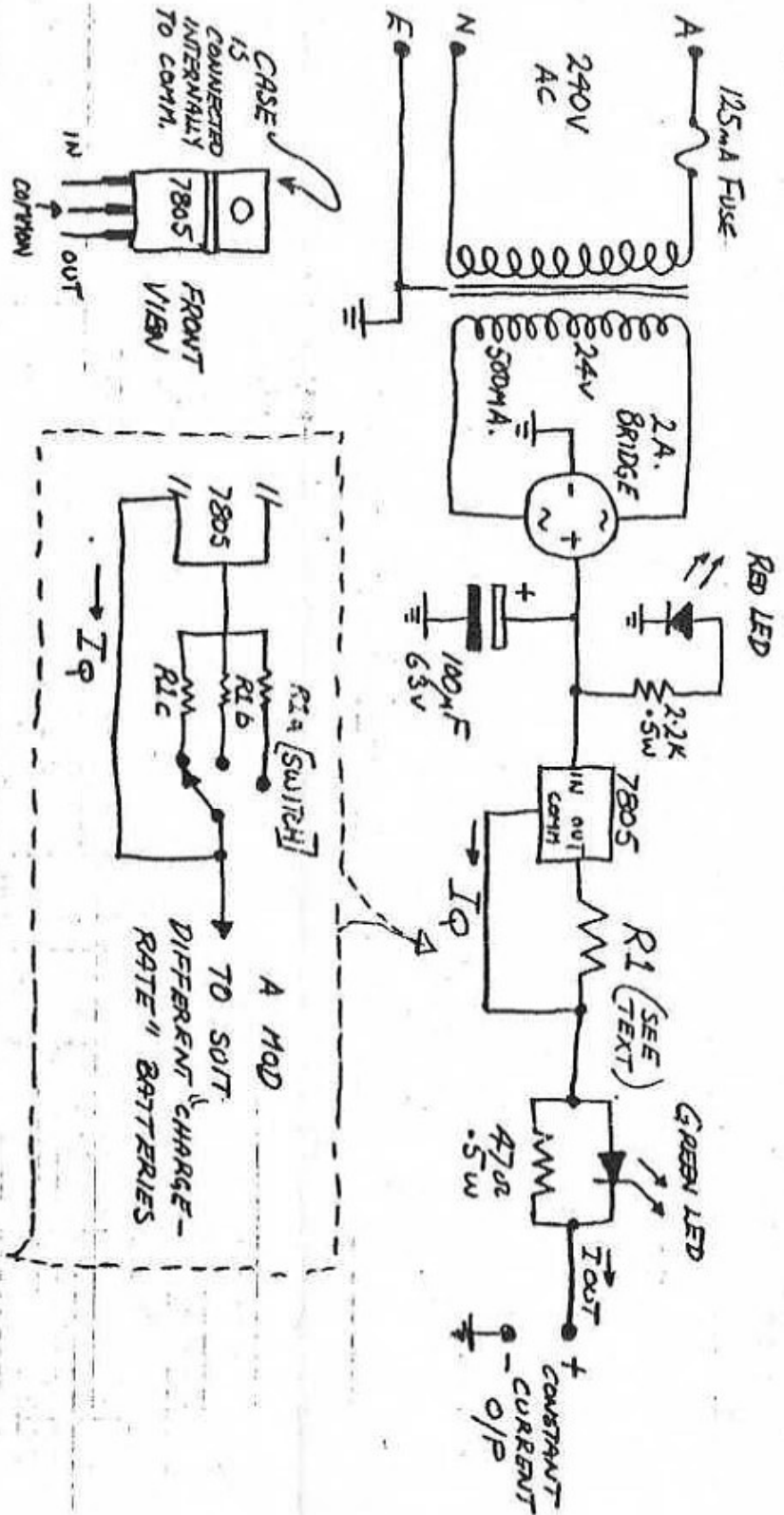
Complete charging from fully discharged takes about 14 hours. This generally means over-night since most of the time the batteries will not be dead flat.

REFERENCES : Fairchild- The voltage regulator applications handbook. 1974

CONT. ON NEXT PAGE.

PLEASE NOTE THE NEXT MEETING WILL BE ON
FRIDAY AUGUST 30th. AND WILL BE FOLLOWED
BY A JUNK SALE/SWAP

85/08
50



A TRUE CONSTANT-CURRENT CHARGER FOR NI-Cd. CELLS

* ANOTHER MIND-BOGGLING-B.A.R.G.- DISCLOSURE 'CIRCA 1985'

OMEGA AUSTRALIA

As part of our family Christmas Holidays we visited friends in Sale, Gippsland, where I shared a few B.Berties around the pool table and where my younger daughter was delighted with a turn on a "Header" near Clydebank.

We were told of the Omega Navigational Facility, which had a visitors centre, only 45 km south of Sale on the South Gippsland Highway, and set off over the swing bridge and past the natural gas plant off to the left, between the best rows of Banksia Serrata I have ever seen, with "cones" as big as a football.

The cloud was a little low but at least we expected to spot a tower in the flat country, but we were very close before some of the base was visible with the rest going through the clouds. The displays in the visitors centre in the transmitter building described the 427 m. tower therefore explaining why it was in and out of cloud, and why I could not toss my PUA Dipole over the top./

The Omega long range navigation system gives ships and aircraft of all nations the means of pinpointing positions almost anywhere in the world at any time and in any weather. Traditional reliance on sun, moon, and stars in navigation is not available when the sky is overcast, and accuracy limited. Omega offers the first worldwide radio navigation system independent of weather, and sufficient accuracy to meet most requirements of the navigator.

The stability and long range of Very Low Frequency (VLF) radio waves had been established early in the 1900's and experimental stations were set up in 1960's, the system to be known as Omega. The accuracy is none within 4 km using signals from ~~at~~ least three transmitting stations to obtain a position-fix. In order to give overlaps and blanket the world, eight transmitters are required in a global pattern now look at your World Map, children, and note the positions./- in Norway, Liberia, Hawaii, North Dakota, LaReunion (off E. Africa Coast) Argentina, Japan, and Australia.

Each of these stations transmits on a number of frequencies in the VLF band and are co-ordinated very precisely, using a caesium beam clock, and the pattern is repeated every ten, seconds, an Omega receiver in ships, aircraft or land vehicle compares the received signals from any two stations, and is able to determine how much further it is from one station than the other, which establishes a line on which the receiver is situated at the time. Another "line of position" is determined in the same way from another two stations or one may be common, and the point of intersection of the two lines of position fixes the receiving position. Special Omega charts are required for use with some receivers, but others process the information and produces a readout in latitude and longitude.

CONT. NEXT PAGE....

The receiver needs to identify a particular transmitting station, therefore each station, has a unique radio frequency used only by that station, and also the sequence of signals using four common frequencies and its own is its "fingerprint" or "ident". The sequence of eight frequency transmission takes ten seconds and the Australia Sequence is 11.1/3 13.0 13.0 11.05 13.0 13.0 10.2 13.6 I think the wavelength is about 30 km./ The 13.0 is the unique KHz for our facility.

The Gippsland Site is 380 Hectares and its components are as follows:-

The format generator used in conjunction with the caesium beam clock to produce precision timed electronic signals in the required sequence.

The radio transmitter to amplify these signals

A large copper coil (Helix) for efficient coupling of signals from transmitter to antenna

Small copper coils (Variometers) to fine tune the helix for the five different radio frequencies.

The tower supports.

The antenna which comprises 16 wires extending from the top of the tower and a feeder wire from the helix building carrying the signal. These wires are insulated from the ground and the tower.

(Simple isn't it?) but PUA does not fully understand it.

There are two transmitters, one in use and one standby, with output power of 180 kw. the power radiated from the antenna is 10 kw. (Nearly as much as U.S. hams./)

The tower and guy wires are spectacular and the other visible part boxes and dials, but a great day was had by all, and a good pub lunch at Woodside pub. I would recommend a visit if you are going that way- lunch or Omega facility- take your pick.

John, VK3CFH.

Reference:- Booklet produced by Dept. of Transport & Construction.

(Sorry about the delay John, but here it is,) Ed.

Next meeting is on Friday August 30th, to be followed by a JUNK SALE.

Congratulations to Peter Kenyon on attaining the WIA 75 AWARD, Certificate No. 46. Well done Peter.

Useless information file:- Did you know that the CFA VHF radio network comprises- 5100 mobiles, 700 base stations, 900 portables, 159 paging systems and 1500 pocket pagers?

WESTERN ZONE

OF

VICTORIAN



DIVISION

SECRETARY TREASURER

JIM WRIGHT
311 Richards Street,
Ballarat 3350.
Phone B/H. (053) 327 563

Reference: NSAUG

FOUNDED 1910
INCORPORATED 1925

Dear Fellow Amateurs,

How time flies and all of a sudden we have upon us those delightful wintry evenings to spend in the shack ; soldering irons poised ; no new antennas up this month !!!!!' On a serious note , I hope this letter finds you all well and it's good to see those fine rains arrive and hope they are beneficial to our country members.

A little bit of news:

* 17th & 18th of August. R.D. at Reid's Lookout.

Under the guiding hand of Neville PNP it is proposed to hold an R.D. weekend at Reids Lookout National Park (Grampians). The Ballarat gang will supply the antennae and generator. How about YOU supply some gear (vhf/hf) and operating technique, call by and make it an interesting weekend.

* 24 th August. Committee Meeting . Lake Bolac.

* August....Hamilton R.C. looking after Zone hookup.

* SeptemberWarrnambool Zone hookup.

* 21 st September. General Meeting . Lake Bolac. Come along... if not for the meeting, then for the company and fine food..

* Big things in store for Ch. 7.....

* Great to have the Colac boys checking in to 'Hookup'. Thanks Fella's.

* Many thanks to Ross, John, Roy, Woody, Bob, Ken, Bob for the excellent job they have done in getting Ch.7 operating again.

* Great job on the Bike Ride Fella's . Thanks for that fine report Colin . Have forwarded it to A.R. for publication.

* Tnx also for the letter Ken, Glad to hear the locals are keeping their W.I.C.E.N. techniques in fine shape..

I know the above is a bit a pot pouri of Zone activities but if you keep us informed of activities in your area we can maybe expand this news sheet into a worthwhile production..

Thanks again , Allbest for now,

Geoff
VK3ADB President W.Zone.